



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,434	06/06/2005	Tony Day	026808-002800US	7437
20350 7590 10/06/2008 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834				
EXAMINER KOSANOVIC, HELENA				
ART UNIT		PAPER NUMBER		
3749				
MAIL DATE		DELIVERY MODE		
10/06/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,434

Applicant(s)

DAY, TONY

Examiner

HELENA KOSANOVIC

Art Unit

3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-62, 64-68, 70-78 and 97-101 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 99-101 is/are allowed.
- 6) ☒ Claim(s) 52-62, 64-68, 70-78, 97 and 98 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/29/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Finality of previous Office Action is withdrawn. In this Office Action, previously not addressed claims 97-101, are fully considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 52 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case it is not clear what N is referring to.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 52-55, 57-62, 68, 70-73 and **97-98** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter 5,826,432 in view of Fujimoto 5,952,842 and **further in view of Lee 5,949,646.**

Ledbetter teaches an invention as claimed: a substantially sealed airtight cabinet (fig. 4) sized for housing vertical array of heat-producing units 162 having an exterior

shell 109,190,151, an interior divider wall 160 disposed inside the cabinet wherein the shell and the divider wall provide an equipment chamber 164, 163, with a first plenum 190 and a first inlet 172 defined by the divider as an at least one substantially vertical slot, admitting the air uniformly over a substantial vertical length (fig. 4), wherein the divider wall is configured such that the first inlet at least partially vertically overlaps with first plenum 190 (fig. 4) ; said shell and divider wall providing a heat exchanger chamber (on the right side from divider wall 160) in which the heat exchanger 180 is disposed and an equipment chamber (on the left side from dividing wall 160) separate from the heat exchanger chamber (fig. 4); a first outlet 1 (see paragraph 16 below of this Office Action, wherein examiner marked originally not marked first outlet 1 with darkened arrow for clarification) wherein the first plenum communicates with the openings for exhausting substantially all of the flow through the array in substantially horizontal direction (fig. 4); a second plenum 191 defined between the chamber shell and the array for receiving the air that has passed through the array having a second inlet 2 (see paragraph 16 below of this Office Action, wherein examiner marked originally not marked second inlet 2 with darkened arrow for clarification) and second outlet 3 (see paragraph 16 below of this Office Action wherein examiner marked originally not marked second outlet 3 with darkened arrow for clarification) defined by the divider wall such that the air is directed horizontally (fig. 4) from equipment chamber 164,163; a heat transfer means 180 (col. 6, ll. 21-25) disposed in the cabinet for carrying heat away from the cabinet; a door 210 (fig. 7) configured to provide selective access to the heat-producing units based on at least one of an environmental compatibility inside and

outside the cabinet (fig. 11A), when the enclosure around the cabinet is closed (col. 9. ll. 47-63) wherein the doors have independent locks (fig. 11A).

Regarding claims 52 and 56 they are also rejected based on the consideration of the first inlet, first air plenum and first air outlet as shown in paragraph 6 of this Office Action. First inlet 1 described as first outlet in discussion above, with first air plenum 1' and first outlet 1" wherein the first inlet extends substantially a full vertical extent of at least one of the array and the first plenum.

Ledbetter teaches an invention as discussed above and further: a mechanism 173,180 for cooling and recirculation of the air between mechanism chamber 191 (fig. 4) and equipment chamber 163,164, wherein the shell and divider wall are configured to direct the air to the mechanism that may have at least one fan (fig. 16) positioned downstream from the fan wherein the flow of the air through equipment chamber 163,164 is substantially parallel to and opposed to the flow of the air through mechanism chamber 191 (fig. 4);

Regarding claims 71-72 about two-access doors wherein one of accessed door provides the access to the one of the chamber without providing access to the another chamber, the Ledbetter reference provides an equipment access 210 (fig. 4) door for providing access only to the equipment 164. Having another door located on the opposite side of the cabinet where the fan and heat exchanger are located is considered to be a duplication of parts. However, the courts have held that duplication of parts for amplified effect does not distinguish over the prior art, unless a new and unexpected result is produced (In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA

1960), also MPEP 2144.04). In this case providing a second door independently located on the opposite side of the cabinet for providing an access to the fan and heat exchanger is not an unexpected result.

Having a heat exchanger positioned upstream of the fan is considered to be a design choice to person of ordinary skill in the art. Applicant has not disclosed that the position of a heat exchanger provides an advantage, is used for particular purpose or solves a stated problem. One of ordinary skill in the art would have expected Applicant's invention to perform equally well with heat exchanger upstream or down stream from said fan as long as heat exchanger performs its function of exchanging the heat.

Ledbetter is silent about fan and heat exchanger that can be arranged in substantially horizontal arrangement and thus providing substantially horizontal airflow.

Fujimoto teaches the cabinet 10 for cooling boards 83 by heat exchanger 54 and couple of fans 35 that provide the circulation of the air in vertical (fig. 4, col. 4, ll. 12-19) or horizontal (fig. 5, col. 4, ll. 41-52) direction depending of position of the fans.

Having a circulation in horizontal or vertical plane is specifically discussed in Fujimoto, as being an obvious matter of a design choice and depends of a position of the fans-heat exchanger orientation in order to produce the desired cooling flow. Positioning fan and heat exchanger in vertical position in order to produce circulation in vertical plane, or in a horizontal position in order to produce circulation in a horizontal plane would have been an obvious matter of a design choice (MPEP 2144.04). One ordinary skill in the art would have expected Applicant's invention to perform equally well with fan positioned in vertical or horizontal plan (as suggested in Fujimoto), as long as fan

and heat exchanger perform the same function of cooling and transferring the air from one place to another.

Ledbetter in view of Fujimoto teaches the invention as claimed, and further that each of the impeller is removable connected to the cabinet with quick-release fitting (claim 98, see Ledbetter col. 13, ll. 7-10) but is not specific about impellers providing N+1 redundancy.

Lee teaches the unit having fans divided into tree fans per try, one try functioning as a redundant unit in the case of the fan failure (col. 6, ll. 59-64), such that one fan can be replaced while the other fan continue to operate (claim 97).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the Ledbetter in view of Fujimoto invention modified with the Lee redundant impeller in order to provide sufficient ventilation in even with one impeller failure (col. 6, ll. 59-64).

2. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter 5,826,432 in view of Fujimoto 5,952,842 and Lee 5,949,646 and further in view of Jones 6,104,003.

Ledbetter in view of Fujimoto and Lee teaches an invention as discussed above but is silent about a fan with non-return valve.

Jones teaches electronic cabinet for cooling electronic equipment having a plurality of fans 80 equipped with a back draft damper/non-return valve to prevent recirculation of cooling air through any fans 80 that are not in use (col. 4, ll. 37-47).

It would have been obvious to one of ordinary skill in the art to have Ledbetter in view of Fujimoto and Lee cabinet modified with the Jones beck draft damper/non-return valve attached to the plurality of fans in order to prevent recirculation of cooling air through any of the fans that are not in use (col. 4, ll. 37-47).

3. Claims 65-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter 5,826,432 in view of Fujimoto 5,952,842 and Lee 5,949,646 and further in view of Ward 3,387,648.

Ledbetter in view of Fujimoto and Lee teaches an invention as discussed above but is silent about replicable heat exchanger mounted on runners when withdrawn from the cabinet.

Ward teaches an extendible drawer chases/runner which carries the cooling unit to permit inspection of cooling unit (col. 2, ll. 19-21).

It would have been obvious to one of ordinary skill in the art to have the Ledbetter in view of Fujimoto invention modified with the Ward chases/runner unit in order to expect and repair the unit and thus eliminating excess ducts (col. 1, ll. 63-65 and col. 2, ll. 19-21).

4. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter 5,826,432 in view of Fujimoto 5,952,842 and Lee 5,949,646 and further in view of Rose 6,302,147.

Ledbetter in view of Fujimoto and Lee teaches an invention as discussed above but is silent about dry-break connectors.

Rose teaches a fluid conduit-coupling device with coupling or uncoupling pairs (col. 1, ll. 5-8) via dry-break connectors (col. 1, ll. 29-31).

It would have been obvious to one of ordinary skill in the art to have the Ledbetter in view of Fujimoto and Lee invention modified with the Rose quick-connect/disconnect dry-break connectors in order to provide quick connection and disconnection with substantially no introduction of ambient air into the process fluid (col. 2 ll. 24-27).

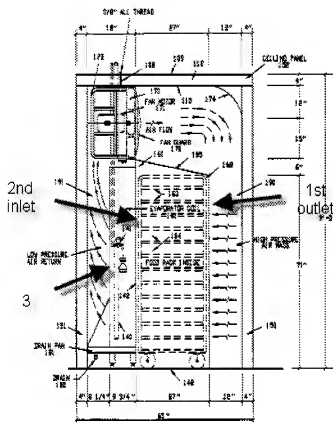
5. Claims 76-78 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ledbetter 5,826,432 in views of Fujimoto 5,952,842 and Lee 5,949,646 and further in view Applicant's admitted Prior art figure 1.

Ledbetter in view of Fujimoto and Lee teaches an invention as discussed above but is silent about an outer enclosure with external panels around the cabinet, an air conditioner between the cabinet and outer enclosure.

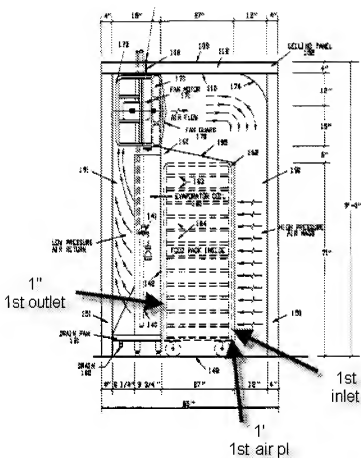
Applicant's admitted prior art (fig. 1) teaches the outer enclosure 4, 3, 5 with external panel 7 and 2, and air conditioner 16 between outer enclosure and the cabinet.

It would have been obvious to one of ordinary skill in the art to have the Ledbetter in view of Fujimoto and Lee apparatus within Applicant's admitted prior art enclosure and air conditioner in order to provide ventilation of the equipment inside the cabinet (spec. page 6, ll. 13-34 through page 8, ll. 1-27).

6. Examiner marked originally unmarked elements with darkened arrows for clarification.



(fig. 4 of Ledbetter)



(Alternatively fig. 4 of Ledbetter)

Allowable Subject Matter

7. Claims 99-101 are allowed.

Response to Arguments

Applicant's arguments filed 3/13/2008 have been fully considered but they are not persuasive.

In response to applicant's argument that Ledbert reference teaches away from horizontal air flow, the examiner disagrees, because it is an obvious matter of a design choice and depends on of a position of the fans orientation in order to produce the desired cooling flow, as discussed in this and in previous Office Action.

In response to the Applicant's argument about N+1 redundancy the examiner applied new reference in order to meet new limitation.

Regarding the applicant's argument about claim 75, the examiner notes that the operator "or" is not applied in claim 75, and that the Ledbetter reference provides the door 210 that is configured to provide selective access based on environmental compatibility inside and outside the cabinet.

Regarding the Applicant's argument that there is no discussion of external temperature or any other environmental parameter in the Ledbetter reference (claim 75), the examiner notes that the cabinet is a refrigerator and therefore differences between outside and inside the cabinet is necessarily present. The door are there to provide selective access to the cabinet in order to provide environmental compatibility inside and outside the door.

Regarding claims 64-67 and 76-78, the examiner noted that the applicant has not separately argued against references: Fujimoto 5,952,842; Jones 6,104,003; Ward

3,387,648, Rose 6,302,147 and applicant's admitted prior art. Accordingly those references are considered to properly show that for what they were cited, as discussed above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENA KOSANOVIC whose telephone number is (571)272-9059. The examiner can normally be reached on 8:30-5:00, Monday through Friday.

Art Unit: 3749

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. K./
Examiner, Art Unit 3749
092208

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749